APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/005,066	12/03/2001	Julie Anna Symons	10015520	9441

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EXAMINER
TRAN, NGHI V

ART UNIT	PAPER NUMBER
2151	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

PTOL-90A (Rev. 10/06)

	Application No.	Applicant(s)
Office Action Summary	10/005,066	SYMONS ET AL.
	Examiner	Art Unit	
	Nghi V. Tran	2151	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>02 November 2006</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>13-22 and 24-38</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>13-22 and 24-38</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This office action is in response to the amendment filed on November 02, 2006.

No claims have been amended. Claims 1-2 and 23 have been canceled. Therefore,

claims 13-22 and 24-38 are presented for further examination.

Claim Rejections - 35 USC § 103

2.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3.   Claims 13-16, 18-22 and 25-30 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Vairavan, U.S. Patent Application Publication No. 2002/0083344

(hereinafter Vairavan), in view of Wang et al., U.S. Patent No. 6,538,997 (hereinafter

Wang).

4.   With respect to claims 22 and 13, Vairavan teaches a method of managing a

network [see abstract and fig.1], said method comprising:

- accessing a database of a stored physical topology of said network to obtain

  authorized address at host ports of switches [paragraphs 0074-0084 i.e. a

  security policy database];

- configuring a switch in said network to forward a packet received at a first port [120, 125 and 130] if an address associated with said packet is authorized for said first port [paragraphs 0054-0060];

- comparing a set of learned addresses against set of expected addresses, said learned addresses comprising addresses associated with packets processed at a second port [115a-g], said expected addresses derived from an expected configuration of said network [paragraphs 0059-0060 and 0086-0101].

However, Vairavan does not explicitly show tracing a topology of said network to find a third port where an unexpected address entered said network, said third port coupled to a device having a media access control (MAC address) that is said unexpected address.

In a method of managing a network, Wang suggests or discloses tracing a topology of said network [i.e. tracing of the computer network, col.1, lns.11-32 and col.5, ln.9 – col.6, ln.65] to find a third port where an unexpected address entered said network, said third port coupled to a device having a media access control (MAC address) [i.e. the determination of which port a particular MAC address is reachable. For example, Wang suggests if ports do not reachable, the frame is flooded over all outgoing non-blocked ports, col.6, lns.50-65].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Vairavan in view of Wang by tracing a topology of said network to find a third port where an unexpected address entered said

network, said third port coupled to a device having a media access control (MAC

address) that is said unexpected address because this feature is a consequence of the

topologies being aligned [Wang, col.6, lns.63-65]. It is for this reason that one of

ordinary skill in the art at the time of the invention would have been motivated in order to

gather specific diagnostic information relating to a particular path through the switched

network [Wang, col.6, lns.20-21].

5.   With respect to claim 25, Vairavan further teaches said configuring the switch

further comprises configuring the switch to drop said packet if said address is not

authorized [paragraph 0132].

6.   With respect to claims 18 and 26, Vairavan further teaches said configuring the

switch comprises programming the switch in said network to recognize authorized

address for said first port [paragraphs 0054-0060].

7.   With respect to claim 27, Vairavan further teaches said configuring the switch

further comprises configuring the switch to forward said packet to a host device [215 i.e.

system processor] if said address is authorized for said first port, said first port coupled

to said host device [paragraphs 0054-0060].

8.   With respect to claim 28, Vairavan further teaches said method further

comprising: determining changes in physical topology of said network [paragraphs

0060 and 0086-0088].

9.   With respect to claim 29, Vairavan further teaches said determining changes in

physical topology comprises comparing a physical description of said network with said

stored physical topology of said network [paragraphs 0060 and 0086-0088].

10.   With respect to claims 30, Vairavan further teaches said address is a media

access control (MAC) address and wherein said network comprises a virtually-wired

switching fabric [fig.2].

11.   With respect to claims 14-15, Vairavan further teaches said network is a virtually-

wired switching network [fig.1] and said first port couples switches in said network and

said second port is couple to a host device [paragraphs 0046-0054].

12.   With respect to claim 16, Vairavan further teaches said method further

comprises: taking corrective action at said second port, wherein said second port is

coupled to a host device [paragraphs 0069-0071].

13.   With respect to claim 19, Vairavan further teaches of said method is repeated for

each interconnect port in said network, wherein said network comprises a plurality of

switches [paragraph 0069 and fig.1].

14.   With respect to claim 20, Vairavan further teaches said method further

comprises: determining changes in physical topology of said network [paragraphs

0059-0060 and 0086].

15.   With respect to claim 21, Vairavan further teaches of said method comprises

comparing a physical description of said network with a stored physical description of

said network [paragraphs 0073-0088].

16.   Claims 17 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Vairavan in view of Wang as applied to claims 13 and 22 above, and further in

view of Holloway et al., U.S. Patent No. 5,805,801 (hereinafter Holloway).

17.   With respect to claims 17 and 24, Vairavan further teaches the method further

comprising: said network is a virtually-wired switching fabric [fig.2] and said third port is

at the edge of said fabric [paragraphs 0068-0070].

        However, Vairavan does not explicitly show disabling said third port.

        In a method of managing a network, Holloway discloses disabling a port [col.3,

lns.3-25].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Vairavan in view of Wang, and further in view of Holloway by disabling the port because this feature not only provides for detection of security intrusions, but also provides the proactive actions needed to stop the proliferation of security intrusions over the domain [Holloway, col.2, lns.41-45]. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated in order to filter on their respective ports against the intruding unauthorized address [Holloway, see abstract].

18. Claims 31-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vairavan in view of Wang, and further in view of Holloway.

19. With respect to claim 31, Vairavan teaches a network comprising:

- a plurality switches [paragraphs 0047-0048];

- said switches interconnected and configured to control communication between a plurality of devices coupled to said network [fig.1];

- a database having stored therein a stored physical topology of said network and authorized addresses associated with packets processed at ports of said switches, wherein said authorized addresses are based on said stored physical topology [paragraphs 0074-0084 i.e. a security policy database];

However, Vairavan does not explicitly show a configuration agent that is able to program said switches based on said authorized address to detect a packet having an

unauthorized address; and a management agent that is able to: compare addresses learned by said switches against said authorized addresses to determine an unauthorized address.

In a method of managing a network, Wang suggests or discloses tracing a topology of said network [i.e. tracing of the computer network, col.1, lns.11-32 and col.5, ln.9 – col.6, ln.65] to find a third port where an unexpected address entered said network, said third port coupled to a device having a media access control (MAC address) [i.e. the determination of which port a particular MAC address is reachable. For example, Wang suggests if ports do not reachable, the frame is flooded over all outgoing non-blocked ports, col.6, lns.50-65].

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Vairavan in view of Wang by tracing a topology of said network to find a third port where an unexpected address entered said network, said third port coupled to a device having a media access control (MAC address) that is said unexpected address because this feature is a consequence of the topologies being aligned [Wang, col.6, lns.63-65]. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated in order to gather specific diagnostic information relating to a particular path through the switched network [Wang, col.6, lns.20-21].

Further, Holloway discloses a configuration agent that is able to program said switches based on said authorized address to detect a packet having an unauthorized address [col.3, lns.30-43 and col.4, ln.46 - col.5, ln.12]; and a management agent that is

able to: compare addresses learned by said switches against said authorized addresses to determine an unauthorized address [col.7, lns.7-68 and col.3, lns.37-39], in a communication system.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Vairavan in view of Wang, and further in view of Holloway by adding a configuration agent and management agent because this feature this feature not only provides for detection of security intrusions, but also provides the proactive actions needed to stop the proliferation of security intrusions over the domain [Holloway, col.2, lns.41-45]. It is for this reason that one of ordinary skill in the art at the time of the invention would have been motivated in order to send an alert frame to the functional address [Holloway, col.8, lns.18-19].

20.   With respect to claim 32, Vairavan further teaches said switches are further configured to forward said packet if said address is authorized [paragraphs 0054-0060].

21.   With respect to claim 33, Vairavan further teaches said switches are further configured to drop said packet if said address is not authorized [paragraph 0132].

22.   With respect to claim 34, Vairavan further teaches there is a one-to-one mapping between ports of said switches [paragraphs 0047-0049].

23.   With respect to claim 35, Vairavan further teaches said addresses are medium

control access (MAC) addresses [fig.2].

24.   With respect to claim 36, Vairavan further teaches said network comprises a

virtually-wired switching fabric [fig.2].

25.   With respect to claim 37, Vairavan further teaches said management agent is

further able to determine changes in said physical topology of said network and to

update said stored physical topology and authorized addresses in said database based

on said changes [0054-0060].

26.   With respect to claim 38, Vairavan further teaches said configuration agent is

further able to re-program said switches based on said updates to said authorized

addresses [paragraphs 0054-0060].

Response to Arguments

27.   Applicant's arguments filed November 10, 2006 have been fully considered but

they are not persuasive because of the following: Vairavan teaches a method of

managing a network [see abstract and fig.1], said method comprising: accessing a

database of a stored physical topology of said network to obtain authorized address at

host ports of switches [paragraphs 0074-0084 i.e. a security policy database];

configuring a switch in said network to forward a packet received at a first port [120, 125

and 130] if an address associated with said packet is authorized for said first port [paragraphs 0054-0060]; comparing a set of learned addresses against set of expected addresses, said learned addresses comprising addresses associated with packets processed at a second port [115a-g], said expected addresses derived from an expected configuration of said network [paragraphs 0059-0060 and 0086-0101]. However, Vairavan does not explicitly show tracing a topology of said network to find a third port where an unexpected address entered said network, said third port coupled to a device having a media access control (MAC address) that is said unexpected address. In a method of managing a network, Wang suggests or discloses tracing a topology of said network [i.e. tracing of the computer network, col.1, lns.11-32 and col.5, ln.9 – col.6, ln.65] to find a third port where an unexpected address entered said network, said third port coupled to a device having a media access control (MAC address) [i.e. the determination of which port a particular MAC address is reachable. For example, Wang suggests if ports do not reachable, the frame is flooded over all outgoing non-blocked ports, col.6, lns.50-65]. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Vairavan in view of Wang by tracing a topology of said network to find a third port where an unexpected address entered said network, said third port coupled to a device having a media access control (MAC address) that is said unexpected address because this feature is a consequence of the topologies being aligned [Wang, col.6, lns.63-65]. It is for this reason that one of ordinary skill in the art at the time of the invention would have

been motivated in order to gather specific diagnostic information relating to a particular

path through the switched network [Wang, col.6, lns.20-21].

28.   In response to applicant's argument that Vairavan does not teach, suggest, or

describe, "comparing addresses associated with packets received at a first port in said

network with expected addresses for said first port to determine unexpected

addresses." Examiner respectfully disagrees because Vairavan suggests comparing

addresses associated with packets received at a first port in said network with expected

addresses for said first port to determine unexpected addresses [paragraphs 0059-

0060; 0086-0101 and figs.2-3]. For example, the firewall module 310 analyzes,

isolates, filters and discards packets [paragraph 0086]. Analyzing, isolating, filtering,

and discarding packets is an example of comparing addresses to determine unexpected

addresses.

29.   In response to applicant's argument that Wang does not teach tracing a topology

of a network to determine a port where a packet associated with said unauthorized

address entered said network. Examiner respectfully disagrees because Wang

suggests tracing a topology of said network [i.e. tracing of the computer network, col.1,

lns.11-32 and col.5, ln.9 – col.6, ln.65] to find a third port where an unexpected address

entered said network, said third port coupled to a device having a media access control

(MAC address) [i.e. the determination of which port a particular MAC address is

reachable. For example, Wang suggests if ports do not reachable, the frame is flooded over all outgoing non-blocked ports, col.6, lns.50-65].

30.   In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See In re Keller, 642F. 2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., 800 F. 2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Applicant obviously attacks references individually without taking into consideration based on the teaching of combinations of references as show in the above.

31.   In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Vairavan in view of Wang by tracing a topology of said network to find a third port where an unexpected address entered said network, said third port coupled to a device having a media access control (MAC address) that is said unexpected address because this feature is a consequence of the topologies being aligned [Wang, col.6,

lns.63-65]. It is for this reason that one of ordinary skill in the art at the time of the

invention would have been motivated in order to gather specific diagnostic information

relating to a particular path through the switched network [Wang, col.6, lns.20-21].

Conclusion

32.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

    a.   "Port isolation for restricting traffic flow on layer 2 switches," by Joshi et

al., United States Patent Number 7,095,741.

    b.   "Extended domain computer network using standard links," by Chin et al.,

United States Patent Number 5,617,421.

    c.   "Method and apparatus for sorting and transmitting data packets," by

Huang, United States Patent Number 6,480,488.

33.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

    A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

34. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nghi V. Tran whose telephone number is (571) 272-4067. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zarni Maung can be reached on (571) 272-3939. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nghi Tran
Patent Examiner
Art Unit 2151

January 23, 2007

RUPAL DHARIA
SUPERVISORY PATENT EXAMINER